



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,633	09/19/2005	Albert Armer	3003-1031-1	4962
465 7590 03/24/2009 YOUNG & THOMPSON 209 Madison Street Suite 500 ALEXANDRIA, VA 22314			EXAMINER KASTURE, DNYANESH G	
			ART UNIT 3746	PAPER NUMBER
			MAIL DATE 03/24/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/518,633

**Applicant(s)**

ARMER ET AL.

**Examiner**

DNYANESH KASTURE

**Art Unit**

3746

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-12,14,16,18,19 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-12,14,16,18,19 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 2, 2009 has been entered.

***Claim Rejections - 35 USC § 112***

2. The previously made 112 2nd paragraph rejections of Claims 1-9, 14, 16, 18, 19, 21 are hereby withdrawn in view of amendments to the claims submitted on January 2, 2009. However, a new 112 2nd rejection is being made to amended claim 10:

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 10-12 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 10 recites the limitation "within the portion of the apparatus" in Line 12. There is insufficient antecedent basis for this limitation in the claim because "the portion" is not mentioned anywhere else in the claim. It is suggested that the phrase – a portion – be used instead.

### ***Claim Objections***

6. Claim 1 refers to a second chamber however, the claim does not explicitly state that the second chamber is part of the second container. It is suggested that the phrase "in the second chamber" be changed to -- in a second chamber --.

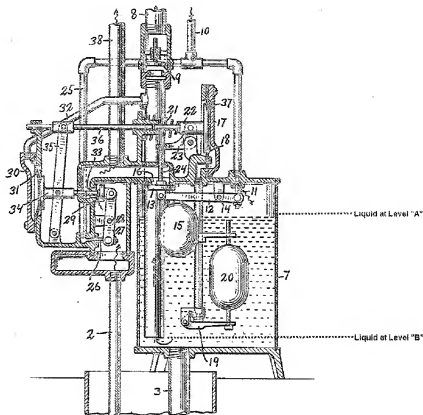
### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 4-8, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Rogers (US Patent 1,444,087 A)



9. In Re claim 1, with reference to blow up of Figure 1 depicted above, Rogers discloses a pump apparatus (title) including:

- a first container including a chamber (4), an inlet (5) and an outlet (6), the chamber being pressurisable (compressed gas entering through tube 2) to effect discharge through the outlet;
- a control apparatus (Fluid motors 17 and 30) for causing periodic pressurisation and depressurisation of the chamber as part of a pressurization/depressurization cycle in response to the level of liquid in the container (once the chamber is full of liquid, the pressurization cycle occurs, therefore it occurs in response to the level of liquid in the chamber),
- wherein the control apparatus includes a pilot valve (11) located in a second

container (7), the second container being connected to, and receiving liquid from, the first container through pipe (3) when the level of liquid in the first container rises to a first predetermined level (which is the level at which the first chamber is full),

- the pilot valve (11) being configured to open when the liquid level in a second chamber (inside 7) is sufficiently high; as evident from Page 2, Lines 25-33: "The drawing shows the parts in the positions which they occupy when the water in the pump chamber 7 is being discharged by the pressure of compressed air .. .. with the compressed air valve open". When the liquid level is at "A" as annotated, the liquid level is "sufficiently high" to push the float (15) against the rocking lever (12) thereby opening valve (11)
- with regard to the claim limitation "to trigger a pressurisation/depressurisation cycle of the chamber of the first container", when the water level in chamber (7) reaches Level "B" as annotated, the system is configured "to trigger a pressurisation cycle" of the chamber of the first container (4). It is noted that there is a time delay between the opening of valve (11) and triggering pressurization of chamber (4) because the pressurization of chamber (4) does not occur until the liquid level has dropped from Level "A" to Level "B", however the examiner points out that the applicant's invention ALSO has a time delay between opening of the pilot valve and pressurization of the first chamber, because the pressure in line 326 of applicant's Figure 3 has to drop sufficiently to overcome the inertia of shuttle valve element 340 so it moves to the right (another time delay occurs to complete the motion of the shuttle valve sufficiently to the right) allowing the compressed air passage to communicate with the first chamber. The

definition of "triggering" in the spirit of applicant's invention therefore can include a time delay.

- and to close (valve 11) in response to the liquid level in the second container (7) falling below a second predetermined level "B", which triggers depressurization,
- the state of the pilot valve determining pressure within a portion (16) of the apparatus, and
- a shuttle valve (32, 34, 22, 23, 36) configured to change state directly in response to the pressure within the portion of the apparatus (when the chamber 7 is allowed to exhaust through 16, the rod 26 moves to a position where pressurization of the first chamber 4 occurs),
- the state of the shuttle valve determining whether motive gas enters into, or is vented from, the first container (when the rod 36 of the shuttle valve moves to the left, motive gas enters chamber 4, and when the rod 36 of the shuttle valve moves to the right, motive gas is cut off by 27 and the chamber 4 is allowed to vent) thereby implementing the pressurisation/depressurisation cycle.

10. In Re claim 6, Rogers discloses that first container (4) and second container (7) are linked by a pipe/passage (3) with a non return valve (valve at the outlet 6).

11. In Re claim 10, Rogers discloses "high level" annotated as level "A" and a "low level" annotated as level "B". The apparatus being arranged so that when one chamber (4) is discharging fluid, the chamber (7) is receiving fluid (from chamber 4).

12. In Re claim 4, Rogers depicts that the height of the first container (4) is larger than the height of the second container (7).
13. In Re claim 5, the base of the second container (7) of Rogers is higher than the base of the first container (4) as depicted.
14. In Re claim 7, Page 1, Line 91 of Rogers states “.. conducts compressed air ..”.
15. In Re claim 8, Rogers discloses a thruster cylinder (pipe 10 is cylindrical therefore it reads on a thruster cylinder that supplies compressed air) by which the motive fluid is supplied to the apparatus. Also pipe (38) is reads on a thruster cylinder that vents from the first container (4).

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



17. Claims 9, 11, 12, 14, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers (US Patent 1,444,087 A) and in view of Emmons (US Patent 1,006,540 A).

18. In Re claims 9 and 11, Rogers as applied to claims 1 and 10 discloses all the claimed limitations except two pumps connected in parallel, and a further valve component in each container configured to vent the motive fluid from the first container when the second vent is closed.

19. Nevertheless, Emmons discloses two pumps 10 and 10' connected in parallel and a plug valve (11) which can be configured with the vent pipes (27), keeping one closed while the other is open.

20. It would have been obvious to a person having ordinary skill in the art at the time of the invention to connect two pumps, each as taught by Rogers, in parallel as taught by Emmons with another plug valve in both vent pipes, configured to keep one vent pipe open while the other is closed for the purpose of reducing the number of components in the apparatus by using a single vent pipe for both pumps.

21. In Re claim 12, Emmons discloses a valve (14) in each first container of the two pumps at the inlet. As depicted in Figure 1, the valves are arranged so that when one pump is charging, the other is discharging. Rogers also discloses inlet valve (5)

22. In Re claim 14, Emmons discloses the second container (19) which is relatively small compared to the first container (10) for both pumps as depicted in Figure 1.

Rogers also depicts that the height of the first container (4) is larger than the height of the second container (7)

23. In Re claim 18, Emmons discloses the second container (19) whose base is at a relatively higher location than the base of the first container (10) as shown in Figure 1.

Rogers also depicts that the base of the second container is higher than the base of the first container.

24. Claims 2, 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers (US Patent 1,444,087 A) and in view of Jorgen (US Patent 5,582,469 A)

25. In Re claims 2 and 19, Rogers discloses that first container (4) and second container (7) are linked by a pipe/passage (3) and it also discloses all the remaining limitations of the claim except for a non return valve intended to allow liquid to pass through only when the pressure of the liquid exceeds a predetermined threshold.

26. However, Jorgen discloses a non- return valve in Figure 2 disposed in a passage as depicted by reference (50) in Figure 1.

27. It would have been obvious to a person having ordinary skill in the art at the time of the invention to incorporate a non-return valve as taught by Jorgen in the pipe (3) of

Rogers for the purpose of providing safety relief in the catastrophic event of abnormal buildup of pressure due to failure of valving elements.

28. In Re claim 16, Rogers depicts that the base of the second container is higher than the base of the first container.

29. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers (US Patent 1,444,087 A) and in view of Yumoto (US Patent 6,015,267 A)

30. In Re claim 21, Rogers as applied to Claim 1 discloses all the claimed limitations except for steam being used as the motive gas.

31. Nevertheless, Yumoto discloses in Column 1, Lines 27-31: "The liquid forced-feed apparatuses used in prior art condensate recovery systems collect the condensate in a hermetic vessel, and introduce a high-pressure working or motive fluid, such as STEAM .."

32. It would have been obvious to a person having ordinary skill in the art at time of the invention to use steam as taught by Yumoto as the motive gas in the apparatus of Rogers as an alternative motive fluid that saves the cost of an added compressed air producing device for supplying motive fluid, if it is steam condensate that is being pumped.

***Response to Arguments***

33. Applicant's arguments with respect to all the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DNYANESH KASTURE whose telephone number is (571)270-3928. The examiner can normally be reached on Mon-Fri, 9:00 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272 - 7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/518,633  
Art Unit: 3746

Page 12

/Devon C Kramer/  
Supervisory Patent Examiner, Art  
Unit 3746

DGK